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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/497,421	02/07/2000	Tai-Chong Chai	71711-2-8	7481

25269 7590 01/25/2002

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EXAMINER

CRUZ, LOURDES C

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 01/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/497,421

Applicant(s)

CHAI ET AL.

Examiner

Lourdes C. Cruz

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on 12-3-01.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2000 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☒ received.
2. ☐ received in Application No. (Series Code / Serial Number) _____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

DETAILED ACTION

This Office action is in response to an Amendment filed December 3, 2001.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the more than one aperture traversing members of claim 5 must be shown or the feature canceled from the claim. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter that the applicant regards as his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims as amendment recite a "plurality of unitary sidebars". Unitary by definition means undivided, whole. However, according to the description of the invention and that shown in the drawings there is only one structure comprised of multiple sidebars that can read on an undivided or whole structure (a whole structure comprised of four sidebars 52). The word "plurality" in conjunction with unitary makes

the claims indefinite for it is not clear whether a plurality of sidebars make-up for a structure with an aperture in it, or if a plurality of undivided structures make-up for a plurality of such apertures as consequence.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kitano et al. (U.S. Patent No. 4942452).

Kitano discloses a lead frame 1 with side bars defining an aperture 2 and a chip support zone (See protrusion on lead frame, Fig. 15-16), said zone being smaller than the chip and each side bar having an upper surface for engaging the chip.

Kitano also teaches:

Said chip supporting zone engaging the bottom of the chip a location remote from higher stress regions (**Claim 2**)

- Rectilinear side bars (Fig. 15)
- Curvilinear (**Claim 4**) side bars (Fig. 26)
- One or more aperture (**Claim 5**) traversing members (1a, Fig. 30)
- Leads 7, support members 3 (**Claims 6,8,9,11**) connected to the side bars

- Side bars intersecting (**Claim 7**) to define corners
- An inherently present (**Claim 10**) ground ring
- See Figs. 15-17 wherein Kitano teaches edges of the outer frame defined by the side bars being disposed within the outer chip edge (**Claim 12 and 13**)
- An apertured frame, (See Fig. 26) said frame being a generally circular frame (**Claim 14**)
- A chip supporting surface engaging the bottom of the chip at a location remote from higher stress regions associated with the chip (**Claim 15**)

Claims 1- 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoo et al. (US 5661338).

Yoo discloses a lead frame 1 with side bars (See Fig. 3) defining an aperture S5 and a chip support zone said zone being smaller than the chip and each side bar having an upper surface for engaging the chip.

Yoo also teaches:

Said chip supporting zone engaging the bottom of the chip a location remote from higher stress regions (**Claim 2**)

- Rectilinear side bars
- Curvilinear (**Claim 4**) side bars (Fig. 2), See openings 5 under chip C
- One or more aperture (**Claim 5**) traversing members (a7-a10, Fig. 6)

- Leads 3, support members T (**Claims 6,8,9,11**) connected to the side bars
- Side bars intersecting (**Claim 7**) to define corners
- An inherently present (**Claim 10**) ground ring
- See Fig 2 wherein Yoo teaches edges of the outer frame defined by the side bars being disposed within the outer chip C edge (**Claim 12 and 13**)
- An apertured frame, said frame being a generally circular frame (**Claim 14**)
- A chip supporting surface engaging the bottom of the chip at a location remote from higher stress regions associated with the chip (**Claim 15**)

Response to Arguments

Applicant's arguments filed 12-3-01 have been fully considered but they are not persuasive.

Applicant argues that Kitano does not teach a chip support zone that is smaller in each dimension than a corresponding dimension of the chip. As pointed out by the examiner in the previous action and in the body of the rejection above the prior art shows a chip support **zone** (See **protrusion** on lead frame, Fig. 15-16), said zone being smaller than the chip and each side bar having an upper surface for engaging the chip.

Applicant also argues that Yoo et al. does not anticipate the invention as claimed because Yoo et al. "describes damping members interposed between support members, while the invention ... is a plurality "unitary" of sidebars". This statement

puzzles the examiner because claim 5 of the present invention recites "one or more apertures traversing members... serving to divide said aperture into a plurality of smaller apertures". Also, see Fig. 5 of the present application where such traversing member is shown.

Additionally, applicant argues that Yoo does not teach a "generally circular" lead frame. The examiner disagrees because the word "generally" in combination with circular reads on any shape of lead frame found in the semiconductor art and known among semiconductor artisans. See that "generally" circular recites a lead frame that is not exclusively circular. Therefore, a square is considered as "generally circular".

Moreover, Applicant argues that claim 14 is not anticipated by the prior art for not mentioning "a small window frame". In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the small window frame) are not recited in the rejected claim. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Applicant's arguments with respect to the previous Office Action mailed have been considered and were found persuasive. See new Office Action above. See that because of failure to positively define a chip there is no dimension relationship between the chip support zone and the chip.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kitano, Mori, Sawada, Yasuhara, Yamaguchi, Kajihara, Terada, Okumura, and Ishikawa disclose lead frames with window openings to reduce the popcorn effect due to thermal strain.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lourdes C. Cruz whose telephone number is 707-306-5691. The examiner can normally be reached on M-F 8:00- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Talbot can be reached on 703-308-1690. The fax phone numbers for


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the organization where this application or proceeding is assigned are 703-305-9883 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Lourdes C. Cruz
Examiner
Art Unit 2815



Lourdes Cruz
January 24, 2002



Jerome Jackson, Jr.
Primary Examiner